

## **REMARKS**

This is in response to the Office Action mailed October 12, 2006. There are no amendments to the claims.

### **Claim Objections**

The Office Action has objected to claims 11-14 as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants traverse this objection.

Claims 11-14 are directed to the *physical stability* of the product in claim 1. The phrase “wherein the liquid enzyme cleaning composition is formulated to provide deteritive enzyme that retains 75% of its initial enzyme activity at ambient temperature for at least about 25 days after forming the composition” in claim 1 is directed to the *enzyme activity* of the product in claim 1. Since the physical stability of the product over time is different from the enzyme activity of the product over time, claims 11-14 further limit the subject matter of claim 1. Accordingly, it is respectfully requested that these objections be withdrawn.

### **Rejections Under 35 U.S.C. §103(a)**

*Wei et al. (WO99/47631)*

The Office Action has rejected claims 1-2, 4-16, and 18-27 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over Wei et al.

Applicants respectfully traverse this rejection.

The present invention is directed to stable *liquid* enzyme compositions. As the present application points out, enzymes generally denature or degrade in an aqueous medium resulting in the serious reduction or complete loss of enzyme activity. This instability results from at least two mechanisms. Enzymes have three-dimensional protein structure which can be physically or chemically changed by other solution ingredients, such as surfactants and builders, causing loss

of catalytic effect. Alternately, when protease is present in the composition, the protease will cause proteolytic digestion of the other enzymes if they are not proteases; or of itself via a process called autolysis. The prior art discloses attempts to deal with these aqueous induced enzyme stability problems by minimizing the water content or altogether eliminating water from the liquid enzyme containing composition. See Application, page 2 line 24 to page 3 line 2.

In contrast to the present invention, Wei et al. is directed to a *solid* enzyme composition. As the present application points out, the use of an enzyme in a solid would not have the enzyme stability problems of a liquid. The portions of the Wei et al. reference that the Office Action uses to teach enzyme stability are all directed to a solid composition. For example, page 54, formulations 5-9 are directed to *solid product stability*. The text on page 49 lines 20-24 discusses the stability of the enzyme activity in the *solid block*. Enzyme activity in a solid block is not analogous to enzyme activity in a liquid for the reasons discussed above. Wei et al. states on page 25 lines 4-7 that the enzyme stabilizing system would provide *some degree of stabilizing effect* to enzyme activity at all levels of free and bound water. This is correct in the context that Wei et al. is using the solid enzyme composition where a portion of the enzyme composition is dissolved in water and then used immediately. However, Wei et al. does not teach an enzyme stabilizing system that would stabilize enzyme in a liquid composition over a period of time, i.e. 25 days. This is significant because the present invention is about a *liquid enzyme composition*, i.e., an enzyme composition that is formed as a liquid, shipped as a liquid, stored as a liquid, or used as a liquid where the enzyme is present in a liquid medium for a significant amount of time. Wei et al. does not disclose all of the elements of independent claims 1 and 15 because it does not include 40% to 85% water where the enzyme retains activity in the liquid composition for at least about 25 days. Alternatively, Wei et al. does not render obvious the present invention

because it does not teach or suggest that the solid enzyme composition would be stable over 25 days if diluted and stored *as a liquid* for 25 days. Accordingly, it is respectfully requested that this rejection be withdrawn.

*Linard et al. (US Statutory Invention Registration H1776) in view of Blake et al. (US 5648329)*

The Office Action has rejected claims 1-27 under 35 U.S.C. § 103(a) as being unpatentable over Linard et al. in view of Blake et al. Applicants respectfully traverse this rejection.

Linard et al. is directed to an enzyme-containing liquid detergent. During the prosecution of the parent application of the present application, SN 09/606,478, now U.S. Pat. No. 6,624,132, Applicants submitted a declaration of Victor Man distinguishing Linard et al. from the present invention on the grounds that the compositions in Linard et al. had poor physical stability. In fact, the physical stability of the Linard et al. compositions was so poor that the enzyme stability of the compositions could not be determined. A copy of the Man Declaration is attached. In the Notice of Allowance mailed May 6, 2003, the Examiner stated that US H1776, alone or in combination did not teach, disclose, or suggest the liquid enzyme cleaning composition of the invention and that the obviousness rejection had been rendered moot because of the Man Declaration. See the Statement for Reasons for Allowance of May 6, 2003, a copy of which is attached. The Examiner went on to state that the declaration demonstrated that the compositions in Linard et al. did not possess enough physical stability for a meaningful determination of enzyme stability and therefore, would not have rendered the invention obvious to a person skilled in the art. The statements in the Man Declaration and the Notice of Allowance remain true for the present invention and Applicants believe that the Man Declaration describes the unexpected results of the present invention.

Blake et al. do not remedy the shortcomings of Linard et al. Blake et al. is directed to a high active premix. Blake et al. do not teach a stable liquid enzyme composition with high amounts of water. Accordingly, it is respectfully requested that this rejection be withdrawn.

*Wei et al. (WO 99/47631) in view of Blake et al. (US 5648329)*

The Office Action has rejected claims 3 and 17 as being unpatentable over Wei et al. in view of Blake et al. Applicants respectfully traverse this rejection.

Applicants believe that claims 3 and 17 are patentable in light of Wei et al. in view of Blake et al. for the reasons discussed above. Accordingly, it is respectfully requested that this rejection be withdrawn.

### **Summary**

It is respectfully submitted that each of the pending claims is in condition for allowance, and notification to that effect is kindly requested. The Examiner is invited to contact the Applicants' primary attorney-of-record, Anneliese S. Mayer, at (651) 795-5661, if it is believed that prosecution of this application may be assisted thereby.



Respectfully submitted,

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